ABSTRACT OF THE DISCLOSURE

Data synchronization detection ~~means 3~~ is provided between data identification ~~means 1~~ and code demodulation ~~means 6 of the~~ in a data reproduction system, which performs data synchronization detection using ~~the~~ code-modulated data ~~itself~~. ~~a~~ A specified bit pattern generated in ~~the~~ a data codeword is calculated in each phase (bit), using a specified bit sequence pattern that is not generated in a specified phase of the data codeword. ~~by the conversion law during code modulation (or there is~~ For example, a specified bit sequence pattern ~~that~~ is generated only in a specified phase of the codeword)~~,~~. ~~the~~ The positions of the data codeword partitions are thereby identified. Scrambling is then applied to the write data as required in order to ensure accurate synchronization detection. ~~In addition, the data position is specified by detecting the pattern correlation between the PLO_SYNC section and GAP section. Thanks to this arrangement, a sector format can be employed constituted by PLO_SYNC, DATA, ECC and GAP, without a data synchronization signal.~~